Evaluating Multimedia Interventions in Community-Based Clinics

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The Healthy Touch ™ Series of multimedia programs has been developed, implemented, and evaluated in selected community clinics over the past year. A high-tech effort in carrying out the design and evaluation of the programs has resulted in a new intervention in clinical care with positive outcomes for both patients and staff. Utilization of the technology has opened up the opportunity to provide consistent, individualized, and enjoyable programs that invite easy patient participation.

This presentation describes a multimedia series designed to provide health care information for new mothers and their infants, and it chronicles its impact on over 200 patients. The Healthy Touch™ Series, was developed by a team of educators, researchers, and clinicians at The University of Texas Medical Branch in Galveston as part of a health promotion program for community-based clinics with the support of the W.K. Kellogg Foundation.

The series was installed in two community-based clinics of the university OB-GYN Department operating in conjunction with the County Public Health Department. The clinics handle an annual combined patient load of 14,773 maternity patients and each clinic has a designated area for the interactive learning stations which are housed in kiosks or stationary units.

The interactive courseware is designed for PC-based platforms with touch-sensitive monitors. Program operation is at an ideal level for novices since it requires no technical skills, reading skills, or prior experience with computer programs. The bilingual programs provide up to six hours of interaction, simulation, and testing of concepts related to pregnancy, infant nutrition, infant and childhood safety, and immunization.

Interactive multimedia uses technology to bundle together multiple collections of information into a single program or application. Although there are numerous examples of the usefulness of multimedia applications in various teaching functions for professional education in the health care field, there are few applications mentioned for patient utilization. The development and implementation of The Healthy Touch ™ Series is a current example of the new directions that healthcare providers can take to integrate multimedia applications with sound clinical practice.

One section of the program, *Feeding Your Baby*, includes a visit to a computerized grocery store. Colorful foods are pictured on the shelves, and the learner can navigate in any direction around the 3-D grocery store. A discovery learning experience has been constructed in which the patient can: touch the sign above the food (to hear the label rather than read it); touch the food (to hear animated audio sounds such as sizzling bacon and get information on nutrient values or age-appropriateness of the foods); or touch the animated grocery cart and move to a new aisle. Screens were created with PC Paintbrush, imported as PCX files directly into the authoring system, Quest 4.0, and combined with digital audio files to be delivered via Soundblaster Pro. The files were mastered on a CD-ROM disc because of the large file size of both the digitized graphics and audio files.

A second example from the series of programs shows how the flexibility in the design can accommodate varied learning needs and styles. In the safety program, entitled *Home "Safe" Home*, the learner is offered a choice of relational courseware formatting or linear formatting. The relational format is the best choice when learners are encouraged to explore all factors affecting the task or concept being taught [1].

In the "safety house," learners choose between a "browsing" mode and a "tour" mode. In the browsing mode, learners wander into the locations of their choice in the 3D house, garage, or yard, and select any items they want to explore. For example, if they touch the medicine cabinet in the bathroom, the door opens and each individual item in the cabinet will respond with an animation or an audio file about the particular substance. Some items have animations or video-in-windows files associated with them as well. The "tour" mode offers a selection of tours that have been developed in a linear format to assist in providing organization and structure for the new information. For instance, the Fire Safety tour visits only the locations in the house that contain items related to fire or burns. The learner can see the animations or hear the fire safety audio messages, but they cannot move to other non fire-related items in the room if they are on the tour.

One factor that creates added instructional capability in the linear or tour mode is the inclusion of digital video in scaled windows by means of a video digitizer card and video compression technology [2]. A fireman conducts the Fire Safety tour of the 3D graphics safety house. He coordinates the linear instructional approach and gives moving video demonstrations of safety techniques. Thus, learners have a wealth of options to meet their educational needs.

References

[1]. Anderson, C., and Velijkov, M. (1990). Creating Interactive Multimedia. Glenview, IL: Scott, Foresman and Company.

[2]. Luther, A. (1989). Digital Video in the PC Environment. New York: McGraw-Hill Book Company.

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